Ecosystem Characterization and Monitoring Initiative (ECMI)

SERDP Strategic Environmental Research and Development Program
Improving Mission Readiness Through Environmental Research

ERDP's SEMP Ecosystem Management Project

Background:

The SEMP Ecosystem Characterization and Monitoring Initiative supports SERDP's ecosystem management research investment, which focuses on ecological indicators, disturbance regimes and ecological thresholds, and adaptive management. The ECMI compliments this research through design, development and demonstration of an ecological baseline monitoring program. The first site for SEMP research and ECMI implementation is Fort Benning, Georgia.

Objective:

The objective of the ECMI is to characterize the long-term spatial and temporal dynamics of key ecosystem properties and processes – hydrologic flux, biological productivity, biogeochemical cycling, decomposition, and maintenance of biological diversity -- in support of ecological research on sustainable management of DoD lands. The resulting monitoring concepts and protocols will have applications on subsequent SEMP research sites beyond Fort Benning.

Summary of Process/Technology:

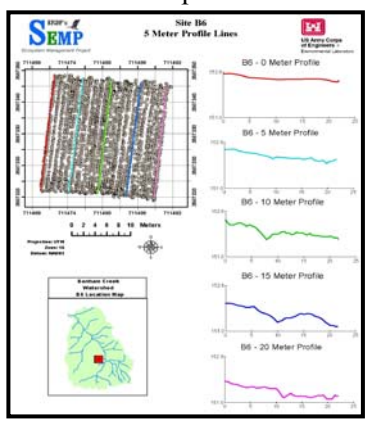
Ecosystem study boundaries have been established on a watershed basis at Fort Benning in coordination with installation land managers and SEMP researchers. Experimental and reference watersheds selected for inclusion in the ECMI represent a range of military and nonmilitary land use, soil type, access, size and potential for off-base influences. Data acquisition relies on remote sensing, image processing and GIS technologies, automated data recorders, remote data download, and selected field data collection. Monitoring focuses on terrestrial and aquatic productivity, aquatic decomposition, land cover type and pattern, vegetation density, weather, surface hydrology, and soil erosion/deposition with variable coverage at watershed, installation, and regional spatial scales over a 15 to 20 year period. Data sets will be made available to research and land management staffs through a state-of-the-art web based data repository.

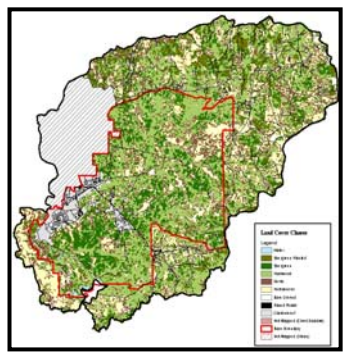
Benefits:

The ECMI will establish a data and information base for use by all SEMP funded researchers obviating the need for each research team to collect these same data separately. This baseline data set should attract other research groups to the site thereby leveraging related research sponsored by other organizations. The ECMI will elucidate relationships among military land use, installation land management, and ecosystem dynamics, thus filling knowledge gaps that limit DoD's ability to meet its ecosystem management goals.

Status:

The ECMI is structured in three phases as described in the Executive Summary Long-Term Monitoring Program Fort Benning, GA, (Kress 2002). The ECMI is currently in the Phase II (FY02-FY06): the adaptation phase. All components have been implemented and re-sampling or monitoring is underway. The aquatic monitoring component is being revised during the adaptation phase to better meet installation and technical objectives. Other components may be adapted or revised as a result of initial data analyses and interpretation. A plan is now under development to transition the ECMI to Ft. Benning.





For more information, visit the SEMP website
http://www.denix.osd.mil/SEMP

US Army Corps of Engineers

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Conservation
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